U.S. CUSTOMER SERVICE
MARKET ANALYSIS

INPUT

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U.S. Customer Service Market Analysis

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Abstract

The purpose of this report is to size the current market for customer services in the U.S., as well as to provide growth expectations over a five-year forecast period. The report breaks down the U.S. customer services market into two major categories: manufacturer-supplied service and third-party maintenance (TPM) service. The report further breaks down each service submarket into product groupings: large systems (comprising supercomputers, mainframes, and minisupercomputers), midrange systems (comprising superminicomputers and traditional minicomputers), and PCs/workstations (comprising business-use microcomputers, supermicrocomputers, and workstations).

The report also discusses key trends and occurrences that will affect service growth and delivery over the next five years.

The report contains 46 pages, including 42 exhibits.

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I

Introduction

I

Introduction

The following report, *U.S. Customer Service Market Analysis*, is the last deliverable for clients of INPUT's 1989 Customer Service Program. The report provides a current market size and five-year forecast for the U.S. customer service market, broken down into the three major product categories: large systems, midrange systems, and PCs/workstations. The report also presents the current market size and forecast for third-party maintenance, and analyzes service issues and trends that will affect both short-term and long-term service revenue growth.

A

Scope

The purpose of this report is to size the current market for customer services in the U.S., as well as provide growth expectations over a five-year forecast period. The report breaks down the U.S. customer services market into two major service sources—manufacturer-supplied service and third-party maintenance (TPM) service. The report further breaks down each service submarket into product groupings: large systems (comprised of supercomputers, mainframes, and minisupercomputers), midrange systems (comprised of superminicomputers and traditional minicomputers), and PCs/workstations (comprised of business-use microcomputers, supermicrocomputers, and workstations).

Following this introduction, an Executive Overview (Chapter II) provides the main points of this report. Each main point is presented in exhibit format, with accompanying text

Chapter III presents detailed market size and five-year forecast information for the total U.S. service market, as well as breakdowns for the large systems market, midrange systems market, and PC/workstation market. A separate analysis of the third-party maintenance (TPM) market follows, broken down into types of products serviced. A ranking of the top large systems service vendors, midrange systems service vendors, and TPM vendors (by market share) is also provided in this chapter.

Chapter IV examines issues and trends that have affected, or will affect, service delivery and growth. Important service issues such as pricing trends, manufacturer versus TPM competition, revenue and expense trends, contract changes, and evolving user requirements for service are explored. A useful summary of the past year's customer service highlights concludes the chapter.

Chapter V concludes the report with management focus items to improve service delivery and uncover future growth markets. Appendixes at the end of the report provide a reconciliation of the 1988 and 1989 customer service forecasts as well as separate forecasts of the software maintenance market.

B

General Methodology

This report was prepared as the culmination of INPUT's 1989 Customer Services Program research activities. During the past year, INPUT surveyed over 1,100 users of computer equipment (broken down by product in Exhibit I-1), measuring satisfaction with service as well as attitudes about and requirements for alternative services, including third-party maintenance.

EXHIBIT I-1

1989 INPUT Research Base

	Respondents
User Research	
Large System	374
Midrange System	400
PC/Workstation	178
TPM	178
Total	1,130
Vendor Research	
Large System	7
Midrange System	11
PC/Workstation	16
TPM	101
Total	135

(The results of this research are presented in the following INPUT reports: *Analysis of Large System Service, Analysis of Midrange System Service, Analysis of PC/Workstation Service,* and *Analysis of Third-Party Maintenance.*) In addition, INPUT surveyed over 100 leading vendors of customer services regarding their current service operations, including revenue performance, employee totals, and services provided. (These surveys resulted in the service vendor profiles found in *Service Vendor Analysis—Large Systems, Service Vendor Analysis—Midrange Systems,* and *Service Vendor Analysis—Third-Party Maintenance.*)

This extensive primary research effort has provided INPUT with significant insight into the customer services market. In addition, INPUT tracks hundreds of manufacturer-based and third-party maintenance organizations, collecting information such as annual reports, Form 10Ks, press releases, marketing literature, and news articles from leading service journals. This information is contained in vendor files at INPUT's Information Center and is used, where necessary, to supplement primary research performed in the past year.

The vendor research accounted for over 90% of the U.S. manufacturer-supplied service and the TPM service revenue for the 1988 base year. Interview results, as well as quarterly revenue information, allowed INPUT to forecast 1989 market information. INPUT used this information, as well as historical data held in INPUT's Information Center, to forecast future service growth expectations presented in this study.

C

Research Forecast Methodology

In 1989, INPUT amassed vendor revenue information on leading manufacturer-based and third-party maintenance organizations. This information was gathered from the following sources: direct surveys, annual reports and Form 10Ks received from the vendor (and stored at INPUT's Information Center, located in its Mountain View, CA headquarters), and various other sources. When necessary, INPUT made estimates of privately held service organizations that declined to reveal their service revenues. In order to focus the forecast on the U.S. service market, only U.S. revenue information was considered.

This information became the basis for the 1988 service market, provided in each forecast as a base year of reported service revenue. The 1989 information, which forms the starting point of the INPUT five-year forecast, was derived from interpretation of public company annual and quarterly reports, Form 10Ks and 10Qs, and survey information regarding growth expectations from responding companies.

INPUT has created a proprietary forecast model that examines past service revenue growth trends as affected by product, service delivery, pricing, and user trends. In addition, assumptions regarding future product population growth and releases, technological trends, pricing trends, and other factors are made and applied to growth rates.

The resulting forecast for U.S. customer service is then broken down by product serviced (large systems, midrange systems, and PCs/workstations). First, companies that address a single product market are automatically placed in that service market. Those companies that address more than one product market are assessed using a model that builds a "typical" system configuration, calculates configured system annual maintenance charges (with any appropriate service discount), and applies that system maintenance charge to the estimated installed number of that system to derive the total service revenue contribution for that product. Each product's service revenue contribution is computed in this fashion, making it possible to break down sources for each company. Separate estimates were made for ancillary services and, where necessary for comparability, software support. (Software support is not included in customer service forecasts.)

Total third-party maintenance revenues are forecasted using TPM vendor revenue information estimated in the same manner discussed above. Product breakdowns are estimated from user research reflecting use of and willingness to use TPM, as well as assumptions based upon anticipated manufacturer service pricing and policy changes.

II

Executive Overview

II

Executive Overview

This chapter contains the summary information and key findings of this report, *U.S. Customer Service Market Analysis*. Each finding is presented in an exhibit with accompanying text.

The U.S. customer service market is undergoing a period of variable growth expectations, for reasons analyzed in this report. The purpose of this study is to analyze market directions and growth opportunities available to manufacturer and TPM service organizations.

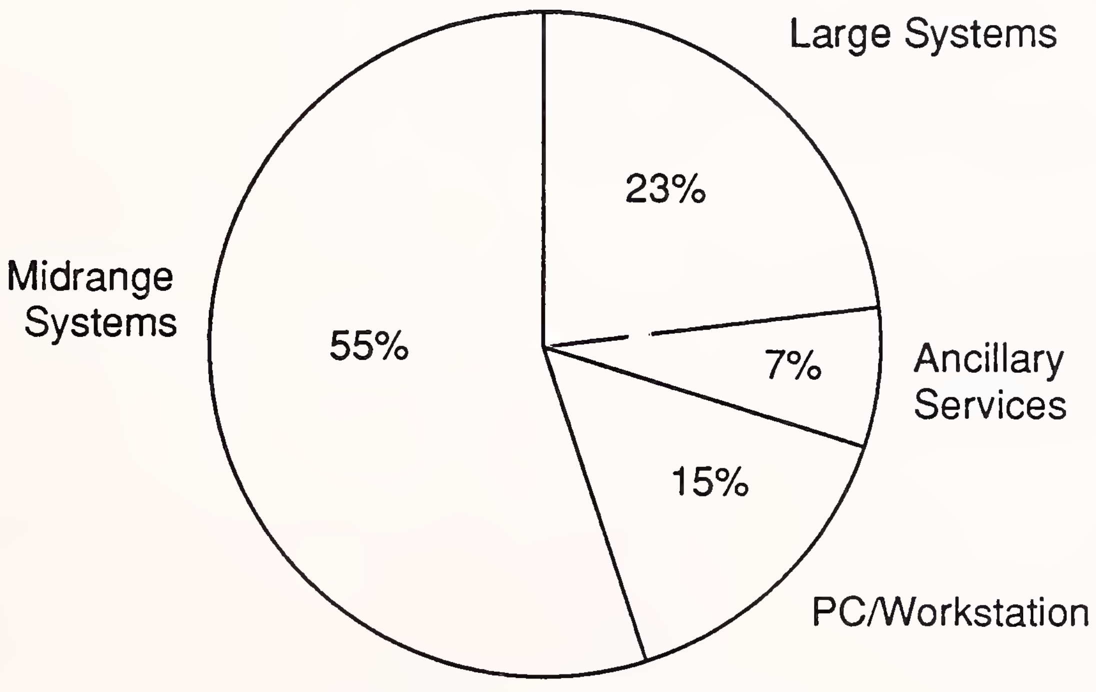
A

1989 Market Overview

The U.S. customer service market totalled $13.1 billion in 1989. Midrange systems accounted for over half the market, as shown in Exhibit II-1.

EXHIBIT II-1

1989 U.S. Customer Service Market by Product Type



Total Market: $13.1 Billion

Source: INPUT

B
1989-1994 Growth

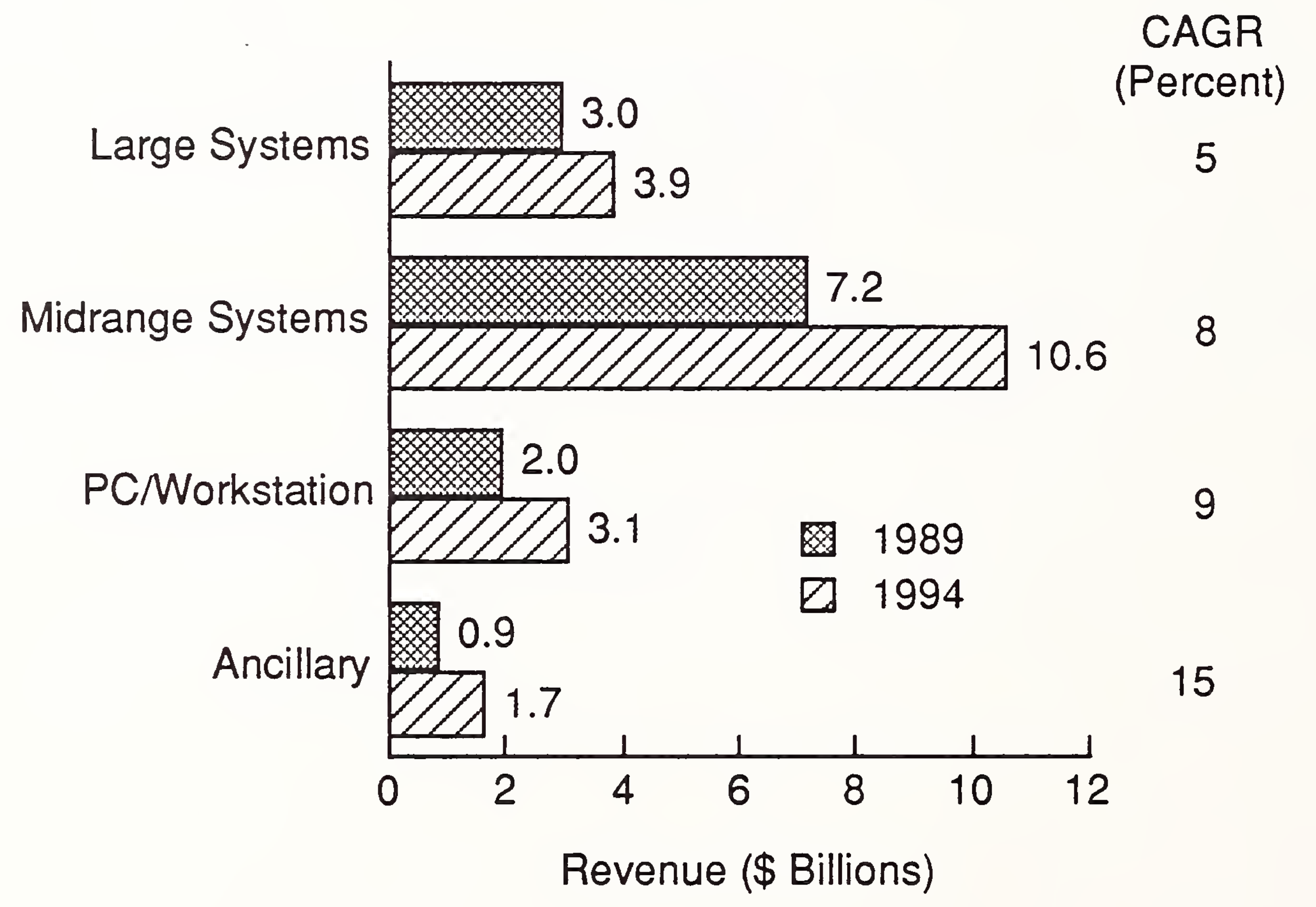
1. Market Growth

The market is expected to reach $19.2 billion in 1994, a compound annual growth rate of 8%. This growth rate is slightly higher than forecast previously and is due largely to the increased pressures that systems manufacturers are finding themselves under to produce higher margins across all lines of business.

Growth rates are expected to vary between different types of products (see Exhibit II-2), from a low of 5% for large systems to a high of 15% (from a low base) for ancillary services.

EXHIBIT II-2

U.S. Customer Service Market Growth by Product Type, 1989-1994



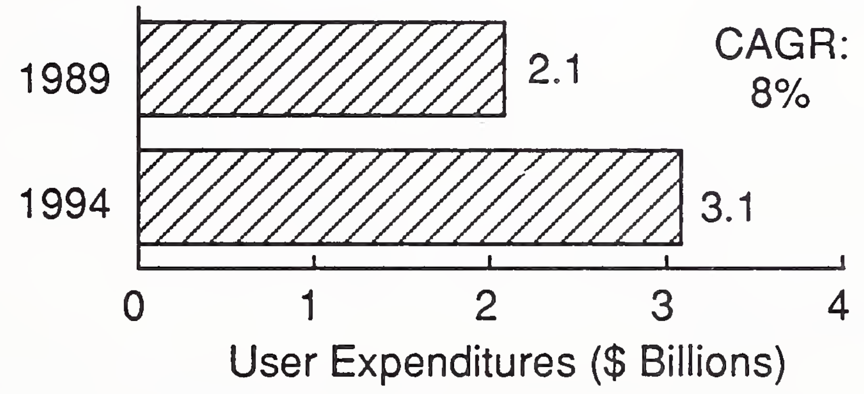
Note: rounded to nearest $0.1 billion

Midrange systems and micro/workstation service will continue to grow somewhat faster than the rest of the service market, and each segment will increase its share in the overall service market. Both product markets will benefit from continued product sales growth, as technological advances improve both product performance and serviceability (as currently reflected in IBM's newest midrange system, the AS/400, which offers excellent price/performance and advanced remote support facilities).

The third-party maintenance segment (figures for which are included in the total market figures in Exhibits II-1 and II-2) is projected to grow at a rate of 8% over the next five years, as shown in Exhibit II-3. This is in line with recent growth, although down significantly from the mid-1980s. Although the IBM price umbrella began to reopen slightly in 1989, it is unlikely it will ever be as broad as it was before.

EXHIBIT II-3

U.S. Third-Party Maintenance Market, 1989-1994



Source: INPUT

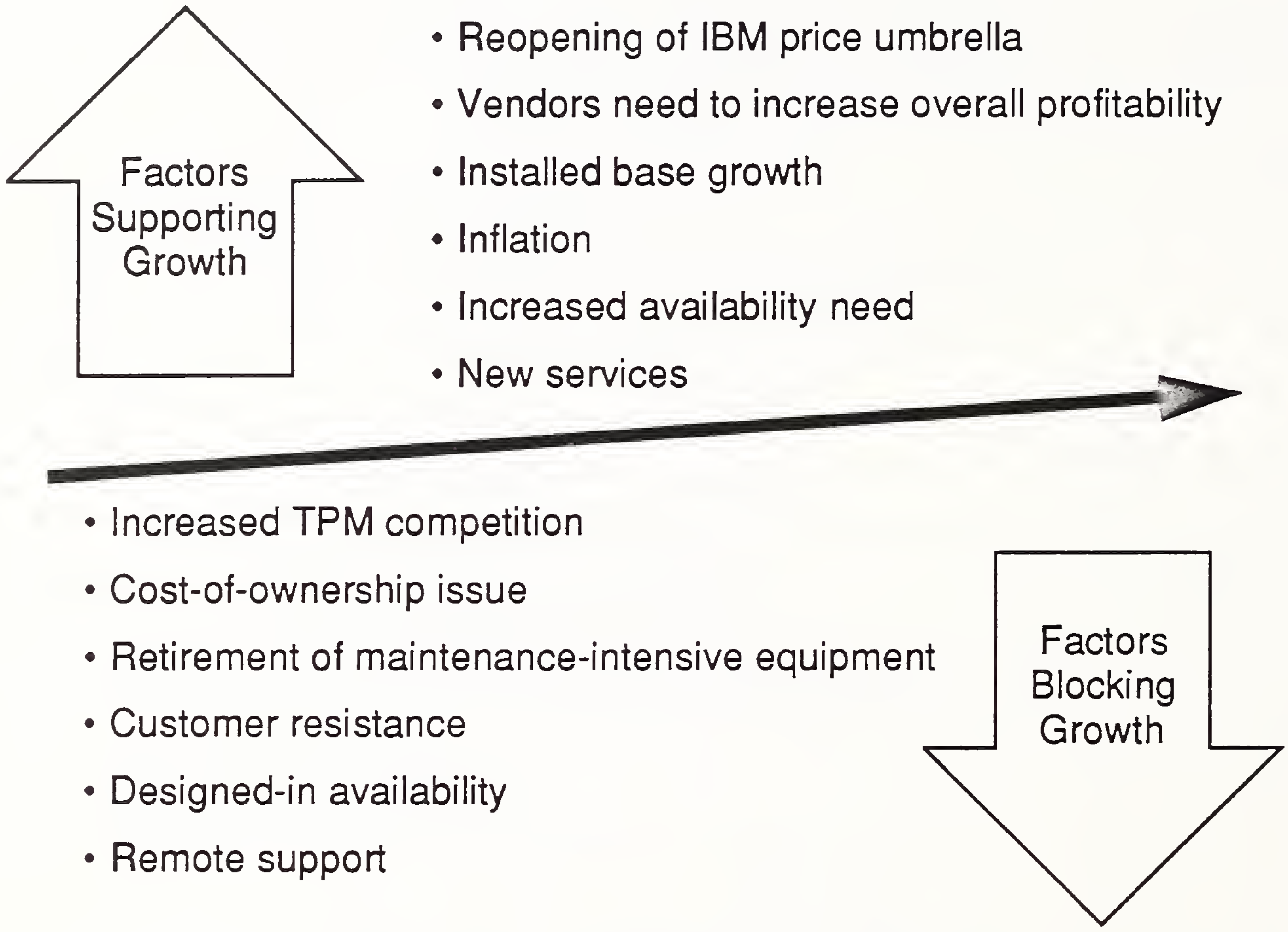
2. Factors Affecting Growth

The factors affecting growth in customer services are finely balanced, as illustrated by Exhibit II-4. For the last several years, market growth was held back by IBM's actions, which were aimed at reducing the cost of ownership of IBM systems. Now that IBM has begun to cautiously increase prices on a selected basis, IBM's price umbrella has begun to shelter other vendors again.

On the other hand, revenue growth will be under constant pressure over the next five years as vendors—especially the TPMs—try to retain their positions. Customers are increasingly placing pressure on vendors by issuing RFPs and asking for special quotes.

EXHIBIT II-4

Customer Service Revenue Growth: Opposing Factors



- Reopening of IBM price umbrella
- Vendors need to increase overall profitability
- Installed base growth
- Inflation
- Increased availability need
- New services

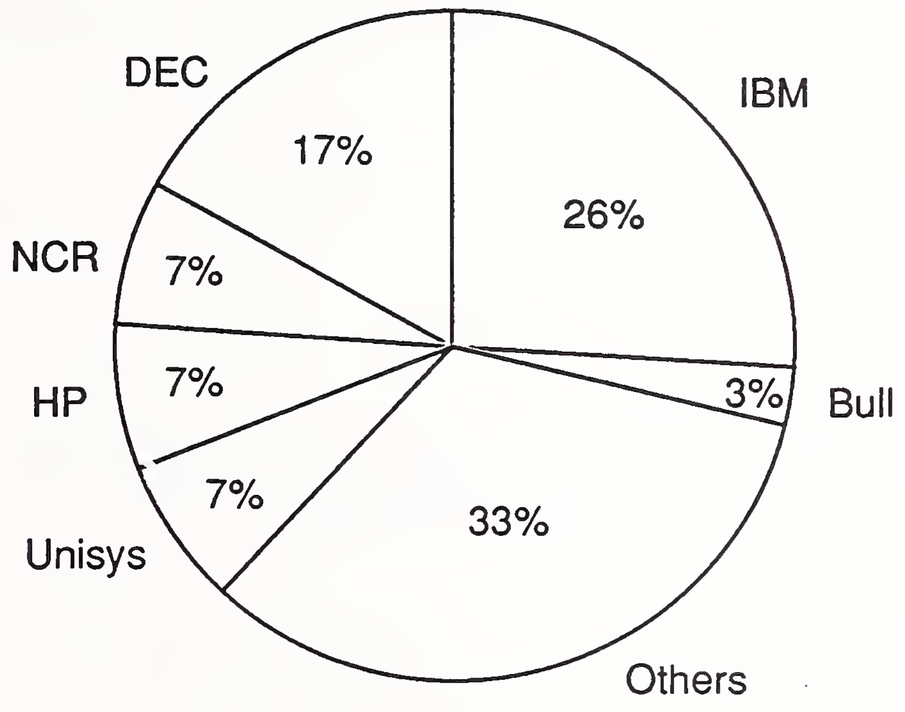
- Increased TPM competition
- Cost-of-ownership issue
- Retirement of maintenance-intensive equipment
- Customer resistance
- Designed-in availability
- Remote support

C
Leading U.S. Service Providers

IBM and DEC accounted for over 40% of the customer service market in 1988, as Exhibit II-5 shows. Not surprisingly, IBM dominates the large-scale market even more (Exhibit II-6), and DEC is the largest player in the midrange market, with over a quarter of the market (Exhibit II-7). The PC/workstation market is much more fragmented, with no single vendor having more than one-sixth of the market (Exhibit II-8).

EXHIBIT II-5

Leading U.S. Service Providers (1988)

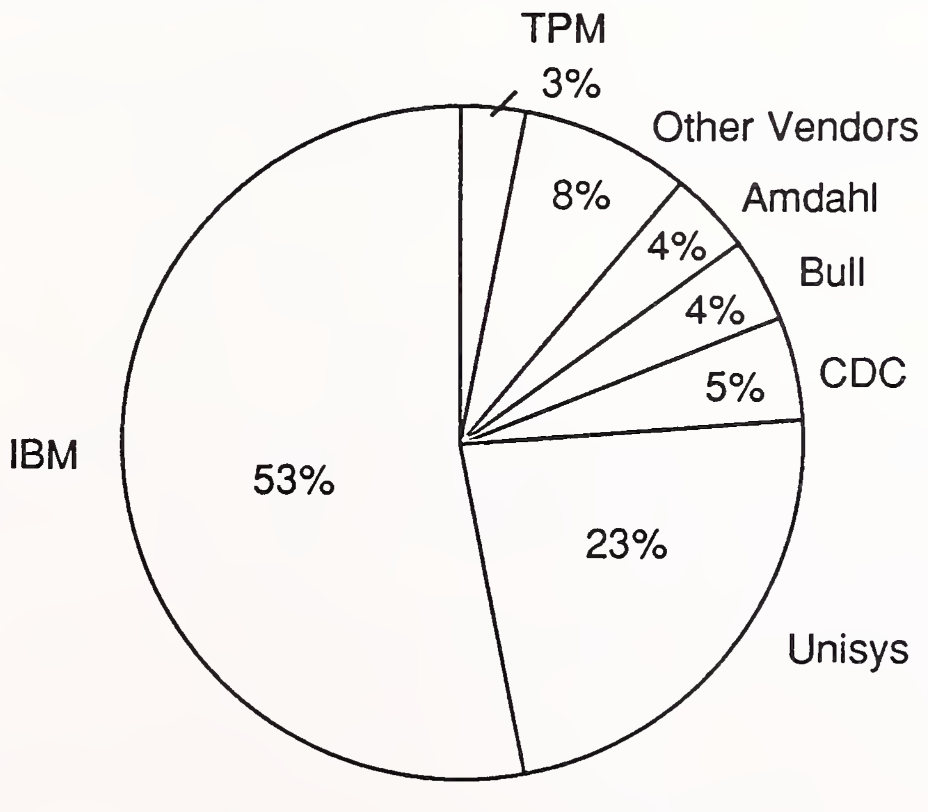


Total Market: $12.1 Billion

Source: INPUT

EXHIBIT II-6

Leading Large System Service Vendors

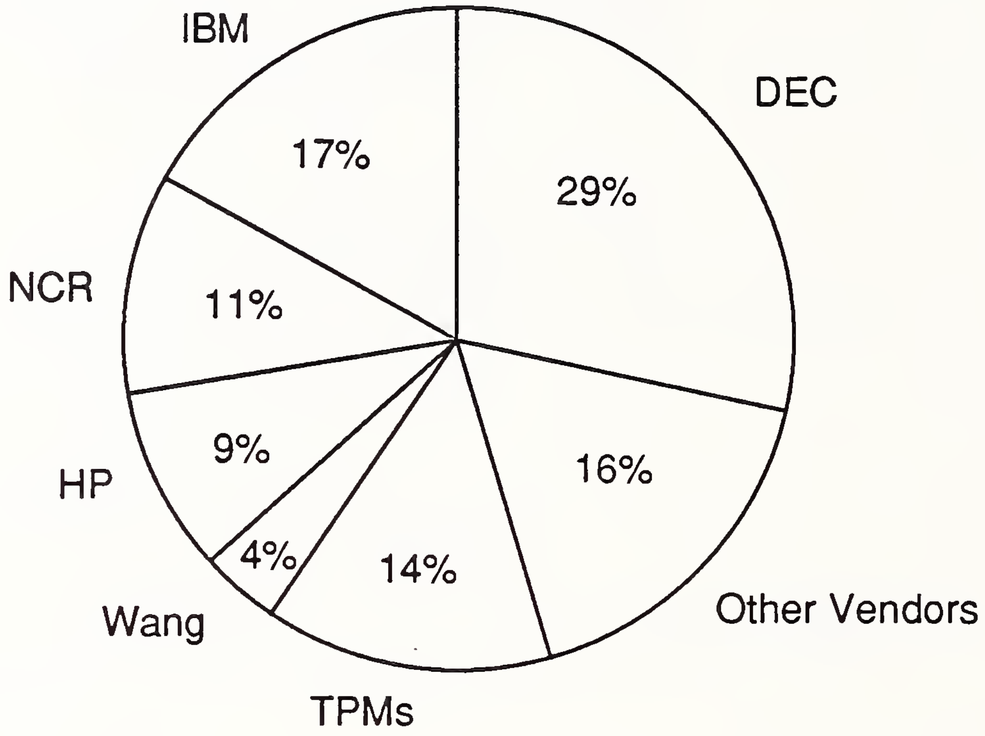


Total Market (1988): $2.9 Billion

Source: INPUT

EXHIBIT II-7

Leading Midrange Service Vendors

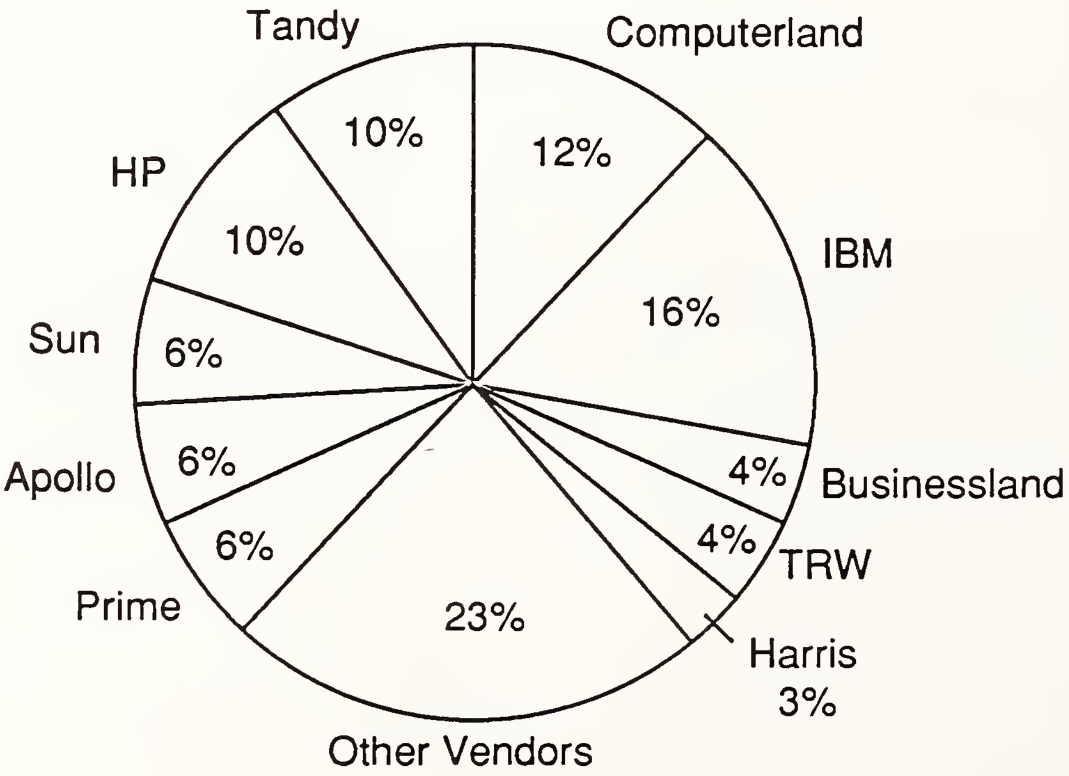


Total Market (1988): $6.7 Billion

Source: INPUT

EXHIBIT II-8

Leading PC/Workstation Service Vendors



Total Market (1988): $1.8 Billion

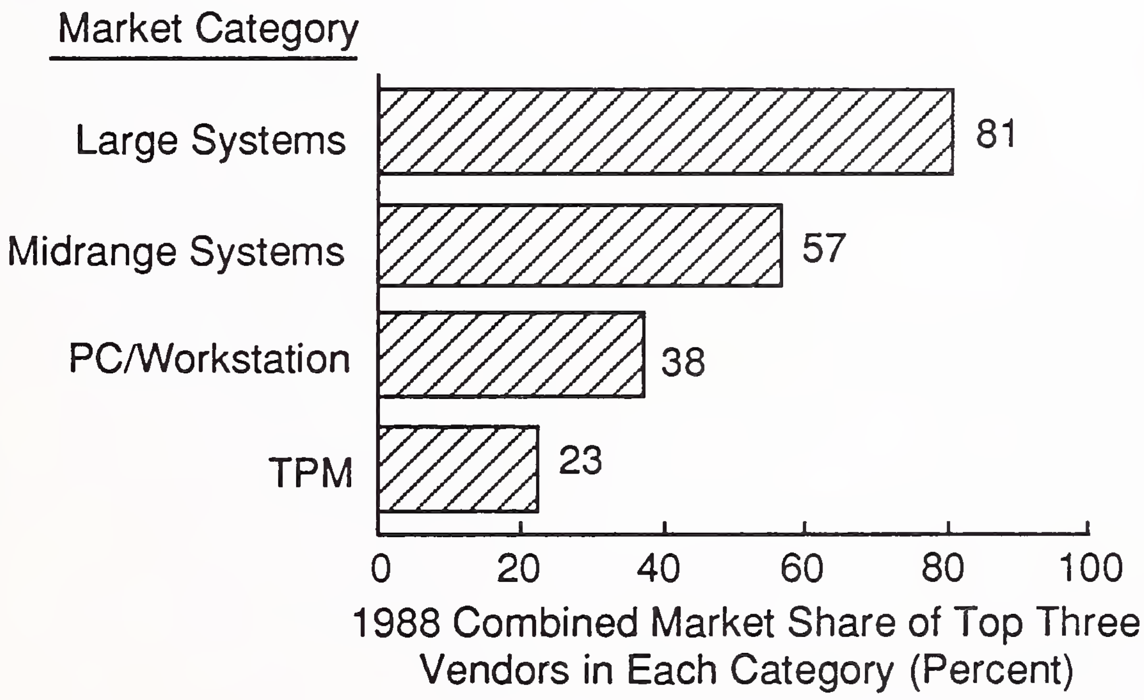
Source: INPUT

Parts of the market are much more concentrated than others: the top three vendors in the large system category account for over four-fifths of the revenues, while the top three TPMs account for under a quarter (Exhibit II-9). This service concentration is a product of:

- The amount of underlying concentration at the manufacturers' level
- The newness of a particular market is (e.g., PCs/workstations)
- The structure of the market (as in the PC/workstation and TPM categories)

EXHIBIT II-9

Combined Market Share of Top Three Service Vendors by Market



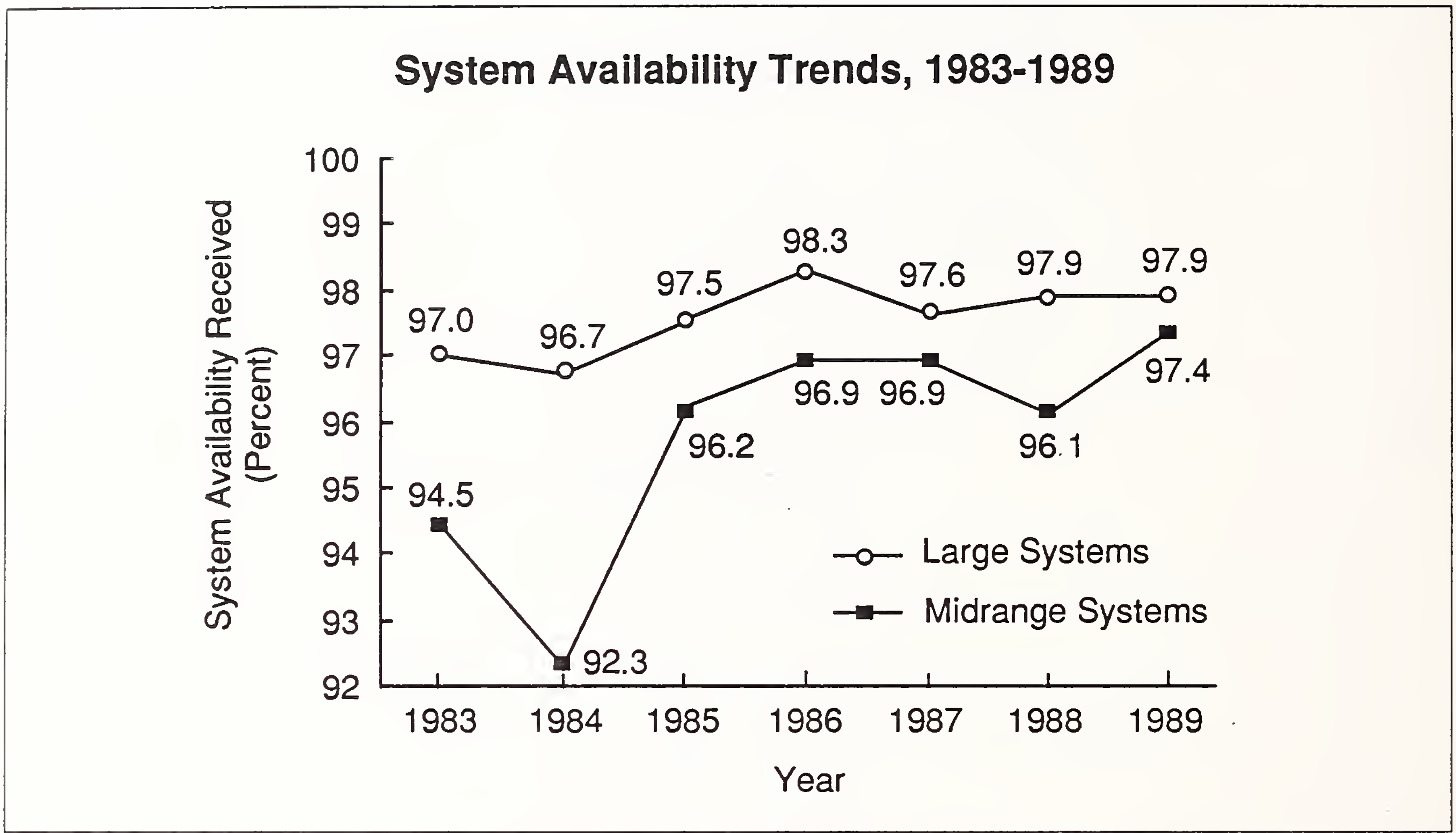
Source: INPUT

D

System Availability Trends, 1983-1989

System availability is of primary importance to users of information processing systems. INPUT has tracked vendor performance in this area since 1983. In 1989, INPUT surveyed 774 users of large and midrange systems regarding the service and support that they received from their vendor, including their satisfaction with system availability. Exhibit II-10 presents large system and midrange system vendor system availability performance for the past six years. For the first time, the gap between large-scale and midrange has practically been closed. Note: the severe dip in 1984 resulted from the inclusion of older products from Datapoint and Burroughs in the midrange sample.

EXHIBIT II-10



III

Current Service Market Size and Forecast, 1989-1994

III

Current Service Market Size and Forecast, 1989-1994

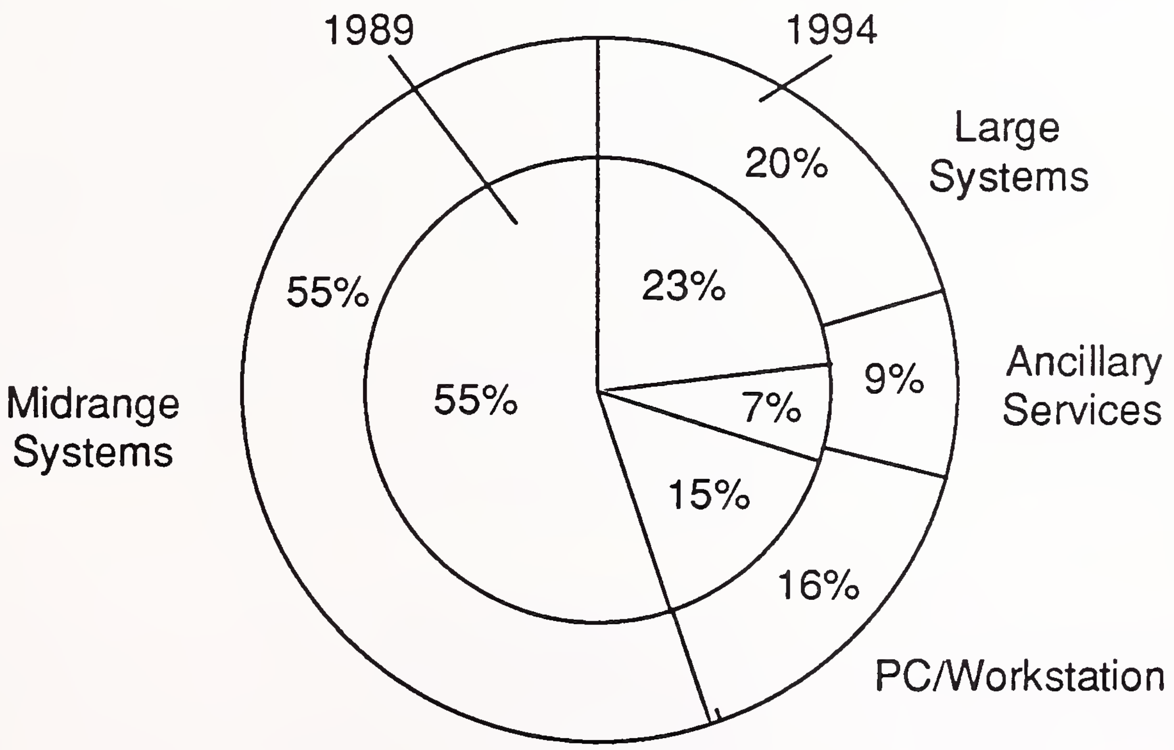
A

U.S. Market Size and Forecast

The 1989 U.S. customer service market was $13.1 billion, divided between the large system, midrange, PC/workstation, and ancillary services submarkets shown in Exhibit III-1.

EXHIBIT III-1

Changes in Product Market Share, 1989-1994



1989 Market: $13.1 Billion
1994 Market: $19.2 Billion

The large systems segment is $3.0 billion in terms of user expenditures and comprises traditional mainframes, minisupercomputers, and supercomputers that have typical word lengths of 32 bits and configuration prices in excess of $350,000. Examples of such systems include IBM 303X, 308X, and 309X, and computer systems that compete with these products, including systems from Hitachi, Amdahl, NCR, Unisys, CDC, and Bull. A smaller segment of this market is held by supercomputer manufacturers (typical configuration prices exceeding $1 million), led by Cray Research.

Historically, the large systems service market has been the largest, due to the fact that it is both the oldest and the costliest (in terms of system purchase price). However, a number of factors have reduced the relative size of this service market, including: competition-caused price reductions (i.e., IBM's Corporate Service Amendment, which effectively reduces CPU maintenance to less than 1.5% of purchase price) that have reduced large systems revenue contribution; expected new products, such as the IBM Summit family, that have slowed new product sales and caused users instead to "bulk up" their existing systems by adding memory; and increasingly powerful smaller systems, which provide the same power and speed as older, larger systems at greatly reduced size and cost.

As a result, midrange systems service constitutes an increasingly important service market, both for manufacturers and for TPMs, who are focusing on midrange systems as a growth market. This market was $7.2 billion in 1989. Midrange systems can be categorized as superminicomputers and the more traditional business minicomputers that, due to steadily improving design and technology, have outgrown traditional definitions (which defined small systems as providing 16-bit to 32-bit word lengths at prices ranging from $15,000 to $350,000. Increasingly, microcomputers and workstations meet the 32-bit definition, and many cross over the $15,000 lower price limit). Typical midrange systems include IBM System 3X, 43XX, AS/400, and 937X product lines, DEC PDP and VAX families (excluding MicroVAX families), and competitive products from a wide range of vendors, including HP, Data General, Wang, AT&T, Prime, Concurrent, Gould, Unisys, NCR, Bull, Harris, Tandem, Stratus, and many others.

Technological advances have also contributed to the PC/workstation market segment, which now comprises 15% of the total service market and was $2.0 billion in 1989. This segment contains business-use microcomputers, supermicrocomputers, and technical workstations that traditionally are defined as 16- to 32-bit word lengths (again, advances have stretched these boundaries) and system prices that typically fall below $15,000. Leading products in the traditional microcomputer segment include IBM's PC family (including the PS/2 line), Apple Macintosh, and systems from Compaq, Tandy, and at least 200 "name" and "no-name" IBM PC clone manufacturers. The most interesting end of this market, the supermicrocomputer and technical workstation markets, are best represented by products from Apollo, Sun, Altos, DEC (the MicroVAX), and, to some extent, IBM (some see the extension of the PS/2 line into this market).

Ancillary services consist of maintenance training, preinstallation planning, consulting, installation/deinstallation, and network design and planning. INPUT estimates that this heterogeneous market was $850 million in 1989.

Midrange systems account for over half of the market, followed by large-scale systems with almost a quarter of the market. These proportions are not expected to change significantly over the next five years.

INPUT expects ancillary services to grow fastest (see detail in Exhibit III-2), although from a relatively low base. This growth reflects the increasing opportunity for professional services associated with customer services.

EXHIBIT III-2

U.S. Customer Service Market by Product Type, 1988-1994

Product Type	User Expenditures ($ Millions)							CAGR (Percent)
	1988	1989	1990	1991	1992	1993	1994	
Large Systems	2,881	3,025	3,176	3,335	3,502	3,677	3,861	5
Midrange Systems	6,686	7,221	7,798	8,422	9,096	9,824	10,610	8
PCs/Workstations	1,819	1,983	2,161	2,356	2,568	2,799	3,051	9
Ancillary Services	740	851	979	1,125	1,294	1,488	1,712	15
Total	12,126	13,080	14,114	15,238	16,460	17,788	19,234	8

1. Forecast Factors

INPUT did not include, in the forecast, nontraditional services such as IBM's systems operations for firms like Kodak or BankSouth, or several firms offering disaster recovery services through their customer service organizations.

- These are services offered *through* the customer service organizations but are not customer services as generally defined. To include these "apples and oranges" numbers would make the forecasts lose much of their focus and value.

- Equally important, these nontraditional services may only have a temporary home in a customer service organization. It is likely that, if successful, many of these services would eventually be spun out of the customer service organization. (These issues are further discussed in the next chapter, "Customer Service Market Issues.")

New service offerings are not the only factor that could increase customer service revenues under certain circumstances. Much of the motivation behind IBM's lowering of customer service charges from 1986-1988 was to reduce its customers' overall cost of ownership; though this presumably helped the IBM Corporation overall, the action certainly reduced IBM's service revenues and had a domino effect elsewhere in the market.

In 1989, IBM began to reverse its position with selective service price increases; its need to increase overall revenues (and profitability) was just too strong. For the remainder of the market, this had the effect of partial reopening of the IBM price umbrella. Exhibit III-3 summarizes these paired factors.

EXHIBIT III-3

Factors Increasing or Decreasing Customer Service Revenue Growth Are Closely Linked

Factors Increasing Customer Service Revenues		Factors Decreasing Customer Service Revenues
IBM price umbrella beginning to reopen	↔	Increased vendor competition generally, especially from TPMs
Need for vendors to increase general profitability	↔	Cost of ownership
Growing installed base	↔	Retirement of maintenance-intensive systems
General inflation	↔	Increasing customer resistance to price increases
Increasing customer need for systems availability	↔	Increased designed-in availability
New service offerings	↔	Potential for nontraditional services to be reassigned outside of the customer service organization

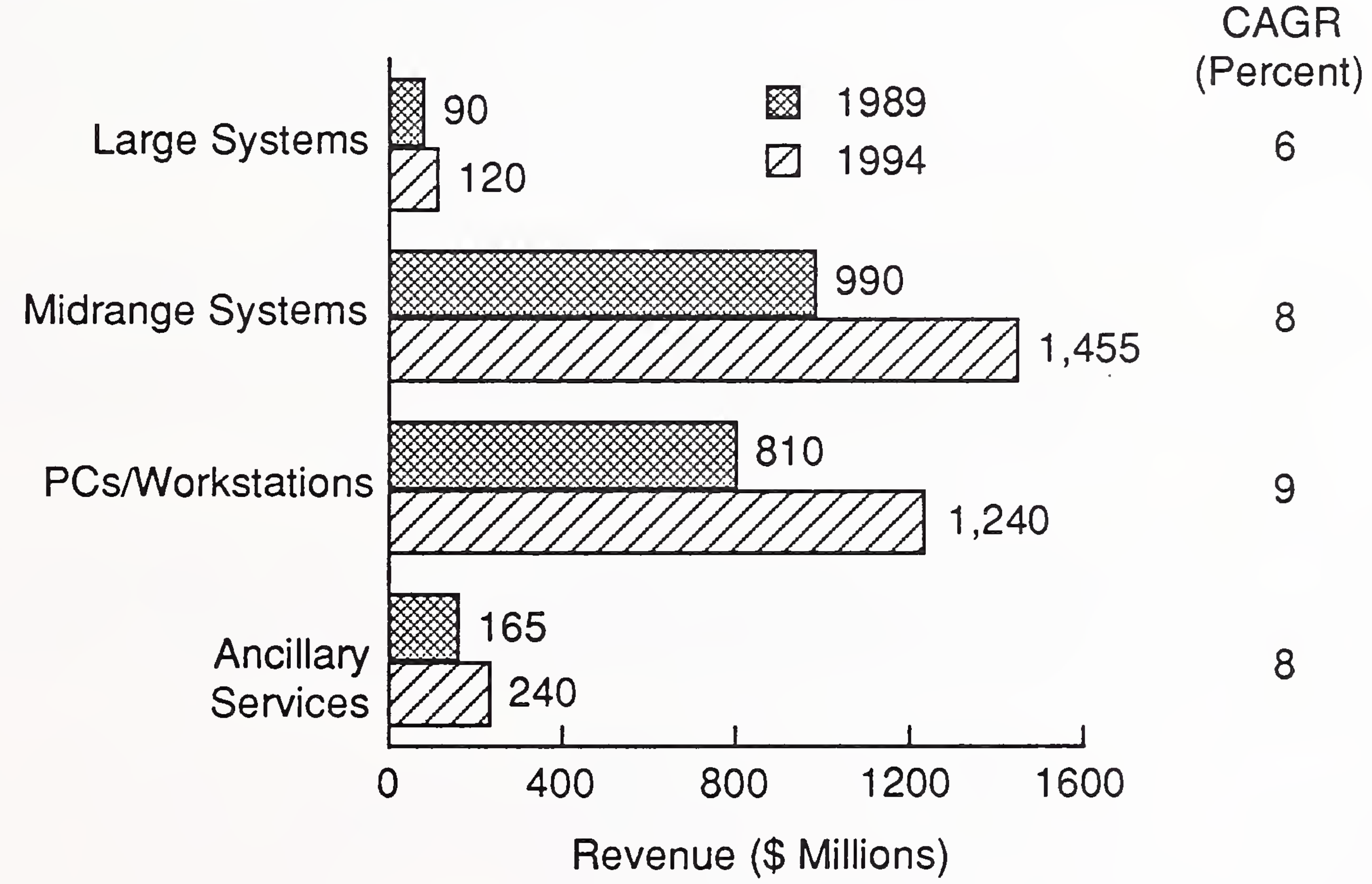
The primary reasons for INPUT's slight increase in its growth estimates for large and midrange systems was the growing inventory of the installed base and the need of manufacturers to increase general profitability. Selective maintenance increases is a relatively discreet way of doing so.

2. Third-Party Maintenance

INPUT forecasts an overall growth rate of 8% for the TPM market, with somewhat more opportunity in the midrange and PC/workstation segments (Exhibit III-4).

EXHIBIT III-4

U.S. TPM Market by Product Type, 1989-1994



In the past, TPMs were able to enjoy relatively minor resistance in competing for service of:

- Peripherals (particularly those supplied by a different manufacturer from the manufacturer supplying the CPU)
- Microcomputers (whose manufacturers often did not have a service presence)

- Older, obsolete equipment (whose manufacturers did not want to do service or did not even exist anymore)

As the TPM industry developed, TPM vendors attempted to attract users of newer equipment, particularly systems that in the past stayed predominantly with the manufacturer's service organization. In order to be successful at this, TPMs often relied on extremely low service prices (usually 25-33% less than manufacturer service prices) as a lure. At the same time, TPMs continued to use small-ticket product service (e.g., microcomputers and peripherals) as a way of getting a foot in the door and later drawing away larger-product service.

In late 1986 and 1987, IBM made a number of service pricing and policy announcements that would severely hamper TPM penetration into IBM's user base. The most significant of these announcements were the elimination of non-prime (outside of Monday-Friday, 8am-5pm) time-and-material service; expansion of contract service coverage for all systems to 24-hour, 7-day; tightening of the spares pipeline; and, most importantly, expansive service discounting programs (CSA and MRSA) that brought IBM service pricing in line with, or even lower than, the prices of most TPMs.

TPM service organizations that competed directly with IBM for systems service were forced to offer similar service plans. CDC, TRW, Intelogic Trace, and Sorbus all offered multiyear service discount plans that often removed many of the customer involvement requirements, such as the help desk or the initialization review and fees.

In 1988, IBM kept pressure on TPMs by offering prepayment discounts (EMO) and its own multivendor service program, called Technical Services Management (TSM). Other vendors offered new multivendor support offerings (HP and DG) or expanded earlier offerings (DEC).

Breaking down the TPM market by product type demonstrates the effect that IBM's CSA and MRSA service policies have had on TPM growth prospects; this is shown in Exhibit III-5. In the large system service market, TPMs have found it difficult to supplant the manufacturer's service offering, since large system users are somewhat less price-sensitive and are more apt to require nonhardware maintenance services that TPMs typically do not provide. In addition, user concern over spare parts availability and access to remote diagnostics and support tools is greater in the large systems market, given the high system availability requirements expressed by large system users. Accordingly, TPM efforts to expand into this market have been limited to either the largest TPMs or small TPMs with focused (product or geographic location) service offerings. The larger TPMs are also coming under serious price pressure from the much smaller "mom-and-pops," that have much lower overheads.

EXHIBIT III-5

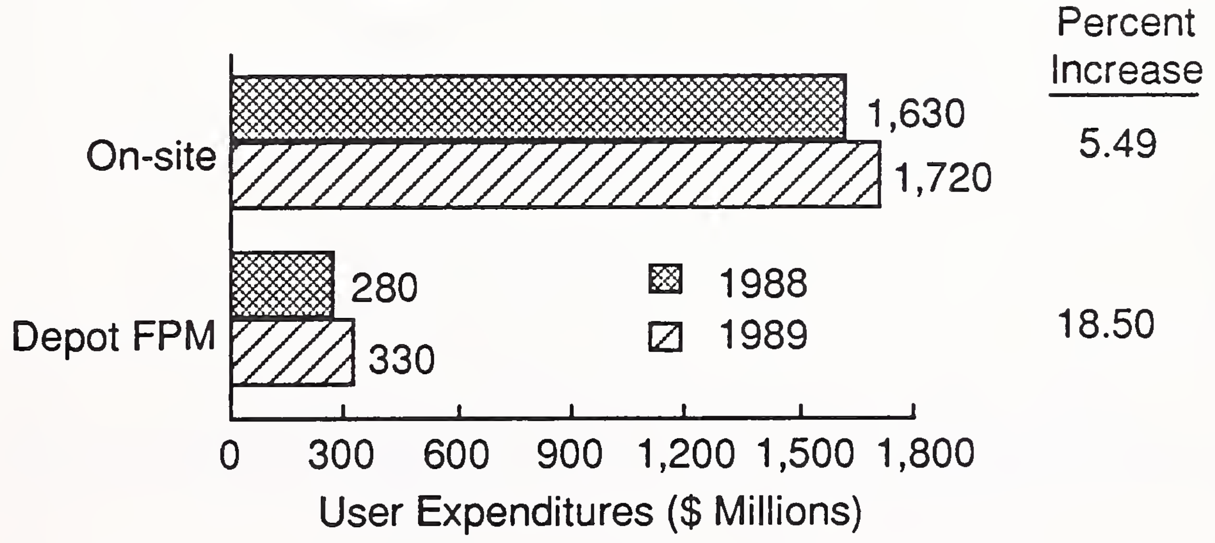
U.S. TPM Market User Expenditures by Product Type

Product Type	User Expenditures ($ Millions)							CAGR (Percent)
	1988	1989	1990	1991	1992	1993	1994	
Large Systems	85	90	95	101	107	113	120	6
Midrange Systems	927	990	1,069	1,155	1,247	1,347	1,455	8
PCs/Workstations	750	808	881	960	1,046	1,140	1,243	9
Ancillary Services	150	165	178	192	208	224	242	8
Total	1,912	2,053	2,223	2,408	2,608	2,824	3,060	8

The bright spots on the TPM scene are the raising of IBM's price umbrella (at least to an extent) and fourth-party or depot maintenance (FPM), which had a good growth rate from 1988 to 1989, although starting from a low base (see Exhibit III-6).

EXHIBIT III-6

On-Site and Depot TPM Markets, 1988 versus 1989



Typical services offered by FPM organizations include product refurbishment (which includes cleaning and cosmetic changes), product refeaturing (product upgrades/downgrades and memory expansion), and reconditioning (typically subassembly repair and remanufacturing). Since sealed disk drives are a common product serviced by FPMs, most major FPM operations require a Class 100 clean-room environment, since dust contamination can destroy disk drives.

FPM offers many benefits to service organizations. Using FPMs to remanufacture components frees manufacturers from having to send components back through their own manufacturing facilities, resulting in faster returns and minimal interruption of normal manufacturing cycles. TPMs without remanufacturing capabilities can utilize FPM to expand their service offerings to include product refurbishment, refeaturing, and reconditioning services without the labor or material (parts, equipment, clean room) requirements.

B

Competitive Environment

The top ten U.S. service providers account for three-quarters of the market, as Exhibit III-7 shows. Note that a nontraditional service provider, Computerland, is now in the tenth spot. IBM leads overall, with a quarter of the market.

EXHIBIT III-7

Top Ten U.S. Service Providers (1988)

Rank	Company	1988 Revenues ($ Millions)	Market Share (Percent)
1	IBM	3,102	26
2	DEC	2,099	17
3	NCR	900	7
4	Hewlett-Packard	847	7
5	Unisys	832	7
6	Bull	315	3
7	Wang	260	2
8	CDC	252	2
9	Prime	217	2
10	Computerland	216	2
	Total—Top 10	9,040	75
	Others	3,086	25
	Total Market	12,126	100

Source: Company reports, interviews, and INPUT estimates

Not surprisingly, IBM has an even larger share of the large system market, as illustrated in Exhibit III-8. As discussed in the last section, the TPMs have an especially difficult time breaking into the large system market.

EXHIBIT III-8

Top Eight Large System Service Vendors 1988 Market Share

Rank	Company	1988 Revenues ($ Millions)	Market Share (Percent)
1	IBM	1,520	53
2	Unisys	656	23
3	CDC	135	5
4	Amdahl	124	4
5	Bull	111	4
6	Hitachi	99	3
7	Cray	80	3
8	NCR	71	2
	Subtotal	2,796	97
	TPMs	85	3
	Total	2,881	100

Source: Company reports and INPUT estimates

TPMs have a more significant share of the midrange system market. DEC and IBM are the market leaders; market shares overall track manufacturers' installed bases fairly closely, as shown in Exhibit III-9.

EXHIBIT III-9

Top Ten Midrange System Service Vendors 1988 Market Share

Rank	Company	1988 Revenues ($ Millions)	Market Share (Percent)
1	DEC	1,944	29
2	IBM	1,154	17
3	NCR	709	11
4	HP	610	9
5	Wang	245	4
6	Data General	190	3
7	Tandem	169	3
8	AT&T	150	2
9	Gould	120	2
10	Bull	119	2
	Total—Top Ten	5,410	81
	Other Hardware Vendors	349	5
	Subtotal	5,759	86
	TPMs	927	14
	Total	6,686	100

Note: Percentages may not total due to rounding.

Source: Company reports and INPUT estimates

Manufacturers have much more competition in the PC/workstation market. IBM is the leader, but with only 16% of the market. Resellers and other third parties are much stronger players, especially for the lower-end systems, as shown in Exhibit III-10.

EXHIBIT III-10

Top Ten PC/Workstation Service Vendors—1988 Market Share

Rank	Company	1988 Revenues ($ Millions)	Market Share (Percent)
1	IBM	297	16
2	Computerland	216	12
3	Tandy	180	10
4	Hewlett-Packard	175	10
5	Sun	110	6
6	Apollo	105	6
7	Prime	104	6
8	TRW	78	4
9	Businessland	65	4
10	Harris	55	3
	Subtotal	1,385	77
	Other Vendors	434	24
	Total	1,819	100

Note: Percentages may not total due to rounding.

Source: Company reports and INPUT estimates

Exhibit III-11 shows the list of leading TPMs and illustrates the upheavals going on in this market: the total revenues for the top ten vendors actually fell by 10% from 1987 to 1988, as the larger TPMS were squeezed from top and bottom for the reasons discussed in the preceding section. The bunching up at the bottom of the list is considerable, with Grumman, for example, only $5 million behind NCR's TPM operations.

EXHIBIT III-11

Top Ten TPMs

Rank	Company	1988 Revenues ($ Millions)	Market Share (Percent)
1	Sorbus	175	9
2	TRW	135	7
3	Decision Data Service	125	7
4	GECS	120	6
5	Intelogic Trace	117	6
6	CDC (TPM)	97	5
7	DataServ	80	4
8	IDEA Servcom	70	4
9	McDonnell Douglas	69	4
10	NCR (TPM)	45	2
	Subtotal	1,033	54
	Other	879	46
	Total	1,912	100

IV

Customer Service Market Issues and Analysis

IV

Customer Service Market Issues and Analysis

This chapter examines the following issues that affect the customer service community:

- IBM strategy and actions
- User service requirements
- Service productivity and profitability
- 1989 customer service highlights

A

IBM Strategy and Actions

In 1989, IBM continued to take service initiatives which impacted both its customers and its competitors. (For a summary of IBM's activities in the 1986-1988 period, see Chapter III, section 2.)

As part of the continuing evolution of its service/solution strategy, IBM announced its ServicePlan in January, 1989, which allows all of IBM's service offerings to be bundled into a single contract. ServicePlan can cover systems integration and professional services, as well as services supplied by IBM's Information Network. IBM also announced an Estimated Billing Option which would allow customers to plan their costs for the following year, as long as their equipment did not change by more than 10% in either direction. The Extended Maintenance Option (i.e., the prepayment option through the IBM Credit Corp.) has been expanded to include all equipment except "usage products" (printers, etc.).

In large accounts, IBM introduced a PS/2-based Service Director to monitor error thresholds for disks and tapes and automatically dispatch technicians where required, utilizing a simple expert system.

IBM also became even more flexible in its use of outside resources:

- Its remarketing program allows IBM dealers and partners to sell IBM service to the customer.

- In addition, the Entry System Service Amendment (ESSA) gives discounts of up to 40% for dealers that screen calls and bill and collect for IBM-supplied service.
- Dealer support was significantly enhanced, signified by establishing an NSD Director of Complementary Channel Services; this support includes access to the NSD parts system, on-site CE support at no charge, and liberal return/trade-in policies.

As Exhibit IV-1 shows, IBM's initiatives in 1989 kept up the pressure in service innovation.

EXHIBIT IV-1

IBM Service Maintenance Initiatives
1989

- Service Plan
- Estimated Billing Option
- Extended Maintenance Option (expansion)
- Service Director
- Remarketing program
- Enhanced dealer support
- Entry System Service Amendment

NSD has been in the forefront of expanding IBM's service offerings generally, in some cases going beyond what is commonly considered "customer service." This culminated in the systems operation contracts announced in May 1989 (with Kodak, First Tennessee Bank, etc.—see Exhibit IV-2). (Note: Systems operation and outsourcing are analyzed in depth in INPUT's Systems Operations Program.)

EXHIBIT IV-2

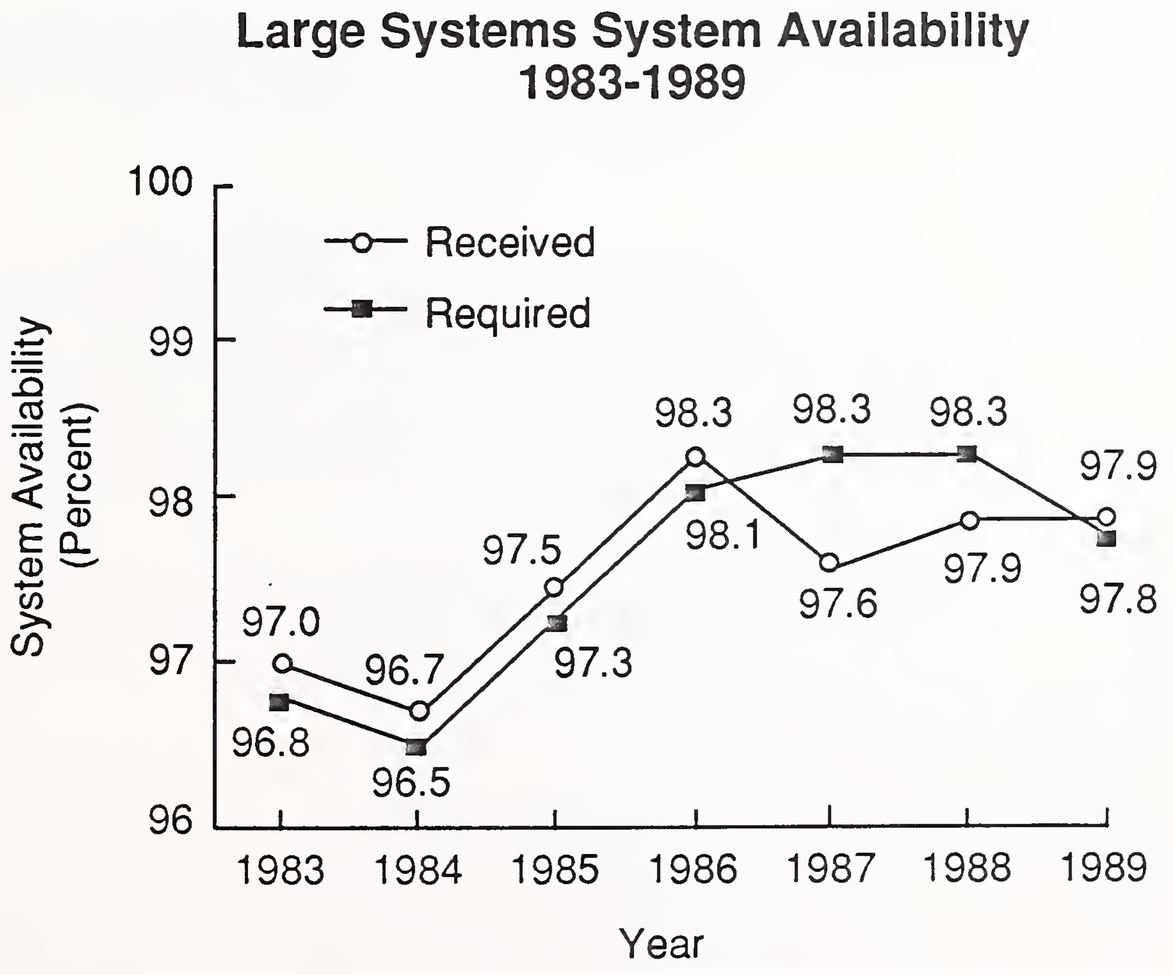
NSD-Sponsored Service Extension

- Data center design/build
- Business recovery service ("disaster recovery")
- Custom migration support
- Systems operations contracts (Kodak, etc.)
- Network traffic analysis

B
User Service Requirements: Closing the Gap

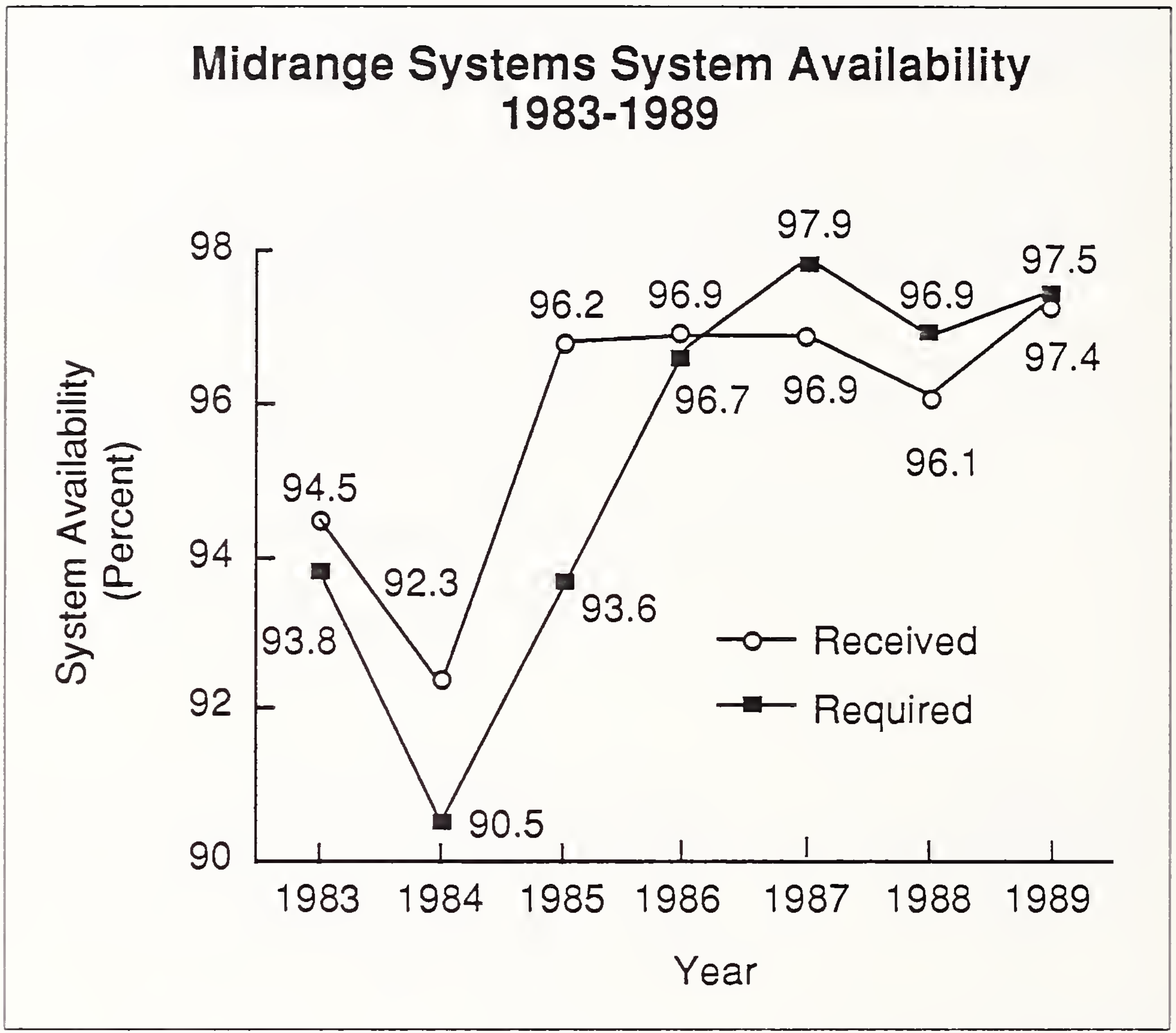
Since 1983, INPUT has measured vendor performance regarding system availability (also referred to as uptime). From 1983 to 1986, large and midrange systems vendors were successful in meeting the steadily increasing system availability requirements of their users, as shown in Exhibits IV-3 and IV-4.

EXHIBIT IV-3



Large Systems System Availability 1983-1989

EXHIBIT IV-4



In 1987 and 1988, a gap appeared between required and received service. INPUT commented that the gap would have to close before prices could be raised. This year saw the gap closed for both large-scale and midrange systems.

User satisfaction with many key service areas is also lagging. Exhibit IV-5 indicates that large system vendors are successful at satisfying a majority of their users' requirements in only two areas (although they are fortunately high-priority areas): hardware engineer skill level and overall hardware maintenance. Large system vendor performance is weakest in the area of software documentation.

Software documentation is also a problem in the midrange market, as shown in Exhibit IV-6, but midrange system users were generally more satisfied than large system users.

EXHIBIT IV-5

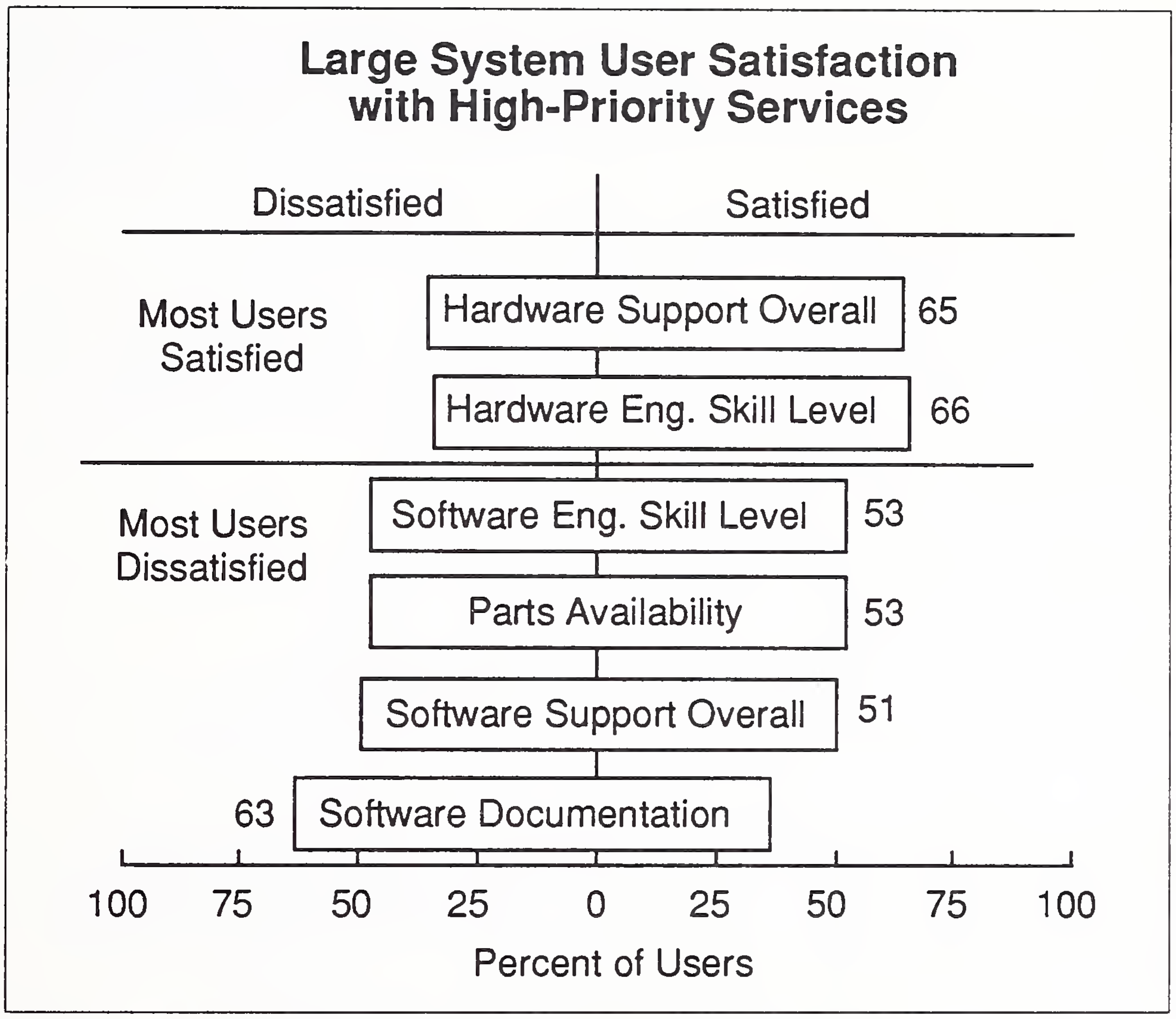
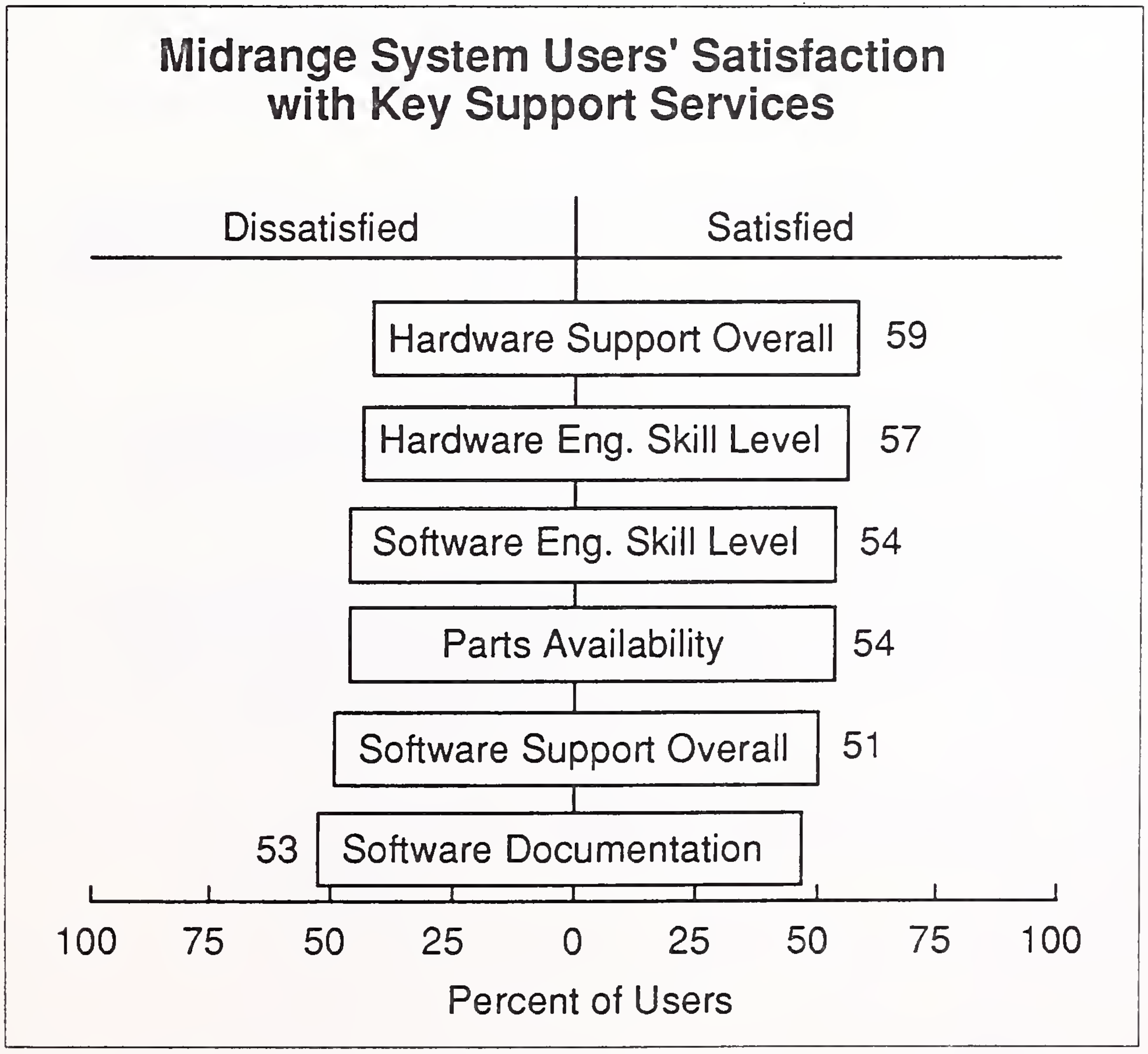
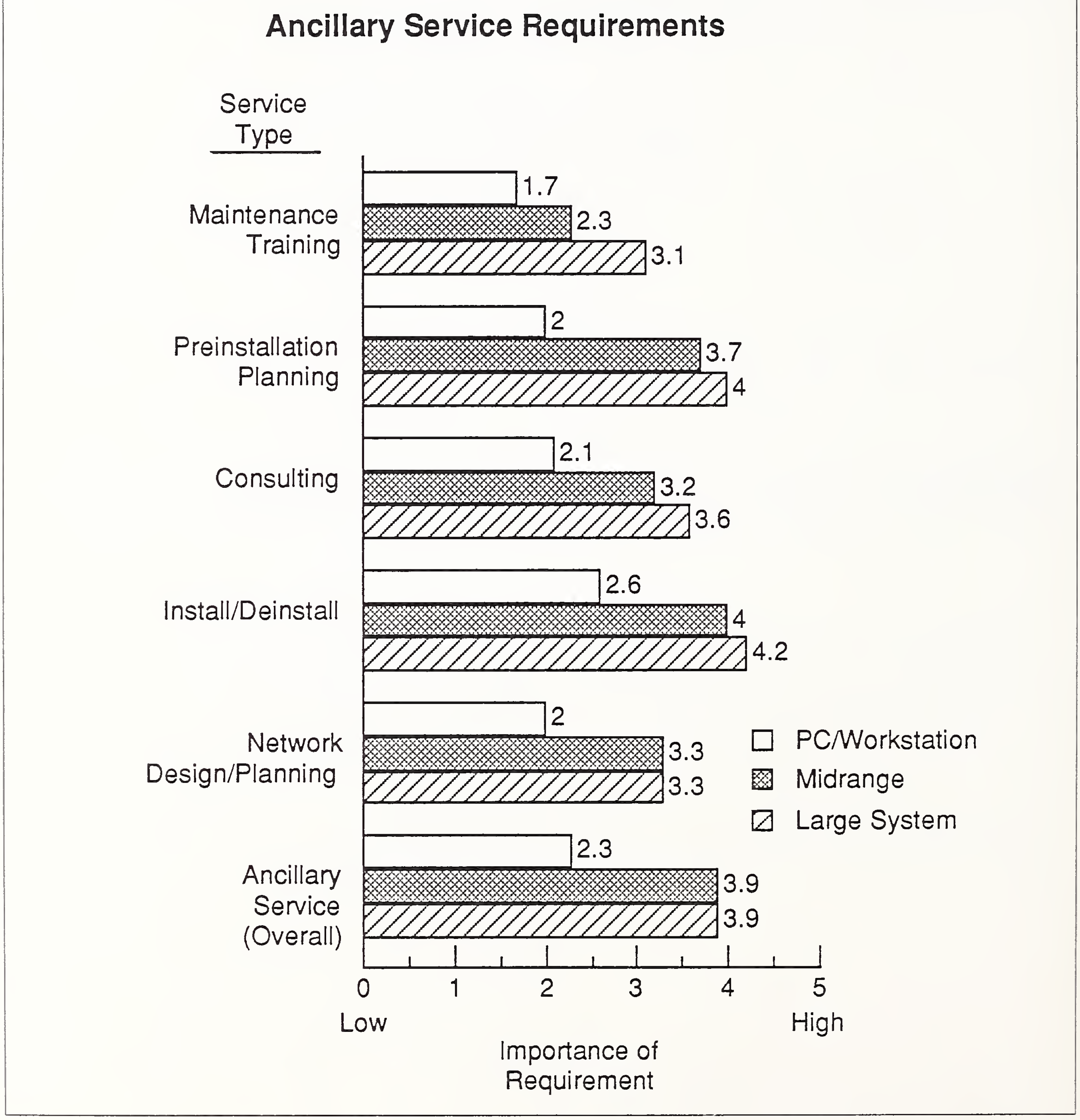


EXHIBIT IV-6



In 1989, INPUT surveyed user requirements for different types of ancillary services. The most notable finding was not that there was a great difference in the types of service required, but that large-scale system users had greater needs than midrange users, who in turn had greater needs than PC/workstation users. This finding is illustrated in Exhibit IV-7.

EXHIBIT IV-7



C

Service Productivity and Profitability

Service productivity can be measured as the ratio of service revenue to service employee or field engineer (FE). The higher the revenue contribution per employee (or per FE), the more productive the service organization.

Exhibit IV-8 compares manufacturer-based service productivity to TPM service productivity. On the basis of 1988 revenue information, the median revenue per manufacturer-based service employee was approximately $128,000, versus $76,000 per TPM service employee. Manufacturer-based FEs each supported $235,000 in revenue, versus $183,000 per TPM FE.

EXHIBIT IV-8

Service Productivity Manufacturer versus TPM

Service Organization Type	Median Rev/Service Employee ($000)	Median Rev/FE ($000)
Manufacturer	128	235
TPM	76	183

Manufacturers: IBM, Amdahl, Wang, NCR, Bull, and HP

TPMs: Intelogic Trace, Sorbus, TRW

Source: Exhibit IV-9

One reason for the difference in service efficiency between manufacturer-based service organizations and TPM service organizations is that a greater share of TPM service is performed on peripherals, microcomputers, and older equipment that does not incorporate remote support and other advanced technology. This means that the TPM FE has to spend more time on-site performing diagnostic and repair activities; in addition, TPMs do little work on higher margin large systems (which are higher margin in large part due to the lack of competition!).

Exhibit IV-9 presents productivity measurements based on service revenue and employee information from selected service organizations.

EXHIBIT IV-9

Service Productivity of Selected Service Organizations

Company	1988 Total Service Revenue ($M)	Number Service Employees	Rev/Service Employees ($000)	Number FEs	Rev/FE ($000)
IBM**	3,102	27,000 *	115	17,000*	182
HP	1,855	15,000	124	7,000	265
NCR	2,097	21,000	100	15,000*	140
Wang	1,020	7,600	134	5,000	204
Bull HN**	315	2,300	137	1,100	286
Amdahl	133 **	1,025	130	410 *	324
Intelogic Trace	117	1,525	77	640	183
Sorbus	175	2,300	76	1,000	175
TRW	260 *	2,100	124	1,300	200

* Estimate
** U.S. only

D

1989 Customer Service Highlights

Exhibits IV-10 through IV-13 list the highlights of 1989 in the customer service market.

EXHIBIT IV-10

First Quarter Highlights

- IBM expands dealer support and announces ESSA
- Grumman offers 2- and 3-year contracts at 70% off DEC MicroVAX prices
- Intelogic Trace acquires CERES maintenance services
- Decision Data Service acquires FDR Field Service Company
- IBM consolidates offerings with service plan and announces estimated billing option
- AT&T purchases Paradyne
- HP purchases equity stake in 3Com. Plans worldwide support for 3Com products
- Unisys opens a configuration and staging center
- Computer Products and Repair files suit against Data General
- Intelogic Trace named service provider for AST Research and WYSE Technology
- NCR signs 3-year agreement to service Encore products
- Wang Labs lays off 180 field service personnel

EXHIBIT IV-11

Second Quarter Highlights

- ACER Technologies offers "one-day, no excuses guarantee on all repairs" utilizing independent TPM network
- Sorbus enters 3090 maintenance market
- TRW announces new service contract based on estimated number of calls
- Unisys offers single contract for four levels of hardware and software service on UNIX systems (Surety)
- IBM initiates new advertising campaign (customer-driven, multivendor and new definition of service)
- IBM announces redistribution services
- U.S. district judge rules in IBM's favor on jurisdiction in AMI antitrust case
- Intelogic Trace acquires Computer Services and Resources
- Acquisition of GE Computer Services is called off
- IBM, Wang and Intelogic Trace announce disaster recovery offerings
- DEC enhances services for LAN, WA networks and LA interconnected service
- HP acquires Apollo
- Encore acquires Gould Computer Systems
- IBM announces selective price increases, effective September 1
- Tandem signs agreement with Diebold to support Tandem products
- Hitachi and EDS acquire National Advanced Systems
- IBM announces custom migration support

EXHIBIT IV-12

Third Quarter Highlights

- DEC enters desktop services market worldwide
- IBM announces 3% price increase, effective November 1
- Virtual Maintenance files antitrust suit against Prime over hardware/software service tie
- IBM moves to graduated monthly license charges for software
- IBM signs agreement with Kodak to build and operate a data center
- D.R. Holdings acquires Prime Computer
- Sun Microsystems to partner service with TPMs and OEMs
- Data General broadens multivendor support offering
- IBM announces incentives to business partners to sell new business offerings
- Novell authorizes DEC to support its hardware and software network products
- Sorbus announces plan to market SunGard disaster recovery service
- McDonnell Douglas announces intention to sell field service business

EXHIBIT IV-13

Fourth Quarter Highlights

- Bank South signs agreement with IBM similar to Kodak's
- IBM announces new offerings:
  - Network Traffic Analysis
  - Problem Management Productivity Service
  - Installation Quickstart (AS/400)
  - IBM SystemXtra (AS/400)
  - IBM COS Express (AS/400)
- HP announces cable design installation services and national support for Novell and 3Com LANs
- IBM broadens the definition of service
  - Direct mail to 200,000
  - Service Expos in 28 locations
- IBM offers end-user support for PCs/workstations
- IBM announces Software Excel in both remote and on-site versions

V

Conclusions and Recommendations

V

Conclusions and Recommendations

Customer service is increasingly being recognized as a key element of the manufacturer's overall business strategy. The key conclusions and recommendations for 1989 revolve around these business issues:

- Customer service as a cost *and* benefit of ownership
- IBM's lessons
- The continued pressure on TPMs
- Customer service as a business

A

Customer Service as a Cost and Benefit of Ownership

Exhibit V-1 shows customer service as one of the five main costs of system ownership. (Personnel and applications software are taken here as costs of operation.) Sophisticated users have a cost model similar to this; consequently, the days of seeing "maintenance" fees as a cash cow are over. However, the recent experiments by IBM to lower the cost of ownership by deeply discounting maintenance showed the limits that customer service can have on the cost of ownership.

EXHIBIT V-1

Customer Service: One Component in the Cost-of-Ownership Equation

Cost of system ownership = Initial hardware cost +
Financing +
Operating system license/maintenance +
Systems software license/support +
Customer service

However, the cost of ownership is only one part of the ownership equation. The *benefits* of ownership include:

- System availability
- System performance
- Applications-enabling software
- Applications software

Customer service, as generally defined, can affect performance, and especially, availability; however, it has little effect on the software-related aspects of systems, as Exhibit V-2 shows.

EXHIBIT V-2

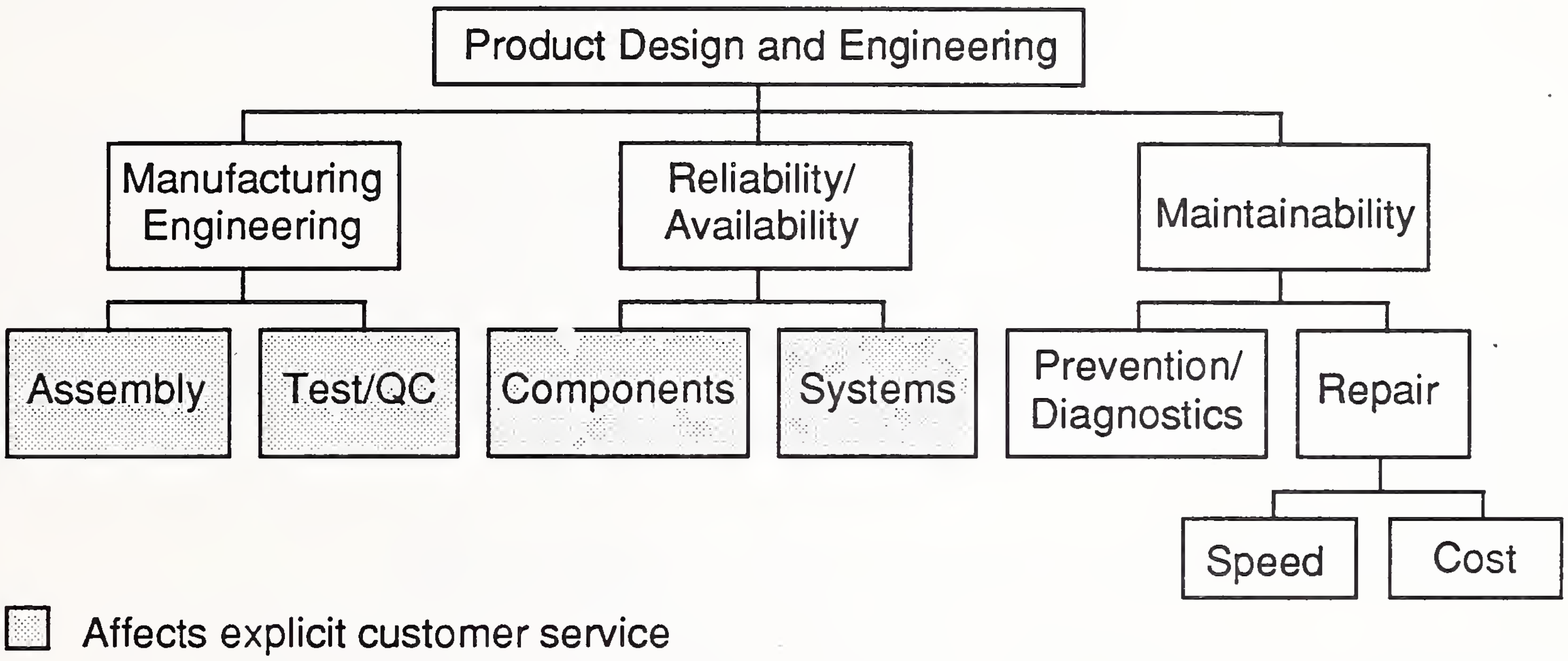
Customer Service Contribution to Ownership Benefits

Ownership Benefits	Customer Service Contribution
System availability	Primary
System performance	Secondary
Applications-enabling software	Nil
Applications software	Nil

What should not be lost sight of is the continued importance of customer service as an integral part of the product design cycle (see Exhibit V-3). There are continuing trade-offs in the customer service attributes that will be designed into a product and those that will be maintained after manufacture. The designed-in attributes can be considered the hidden part of customer service. These designed-in attributes are one of the principal reasons why the apparent costs of customer service have been declining, as a percentage of purchase price.

EXHIBIT V-3

Customer Service as Part of the Product Design Cycle


Product Design and Engineering
Manufacturing Engineering
Reliability/ Availability
Maintainability
Assembly
Test/QC
Components
Systems
Prevention/ Diagnostics
Repair
Speed
Cost
▨ Affects explicit customer service

B

IBM's Lessons

For the last four years, IBM has been in the forefront of customer service innovation. The "lessons" that IBM has learned (and taught others) are shown in Exhibit V-4. Perhaps the most valuable lesson is the value of experimentation as a means of focusing on the "service" in customer service. IBM's experimentation and innovation redefine what customer service is.

EXHIBIT V-4

IBM's Lessons

- Limits of discounting
- Service as an ownership cost
- Value of continued experimentation
- Customer service is part of "service"

C

Continued Pressure on TPMs

IBM's raising of the price umbrella has helped TPMs, especially the more efficient ones. However, the overall pressures on TPMs continued in 1989:

- Manufacturers' price differentials, which had narrowed considerably in 1987 and 1988, widened only marginally in 1989. There is little likelihood that the manufacturers' pricing umbrella will ever be so wide again.

- TPMs continue to find it more difficult to obtain access to parts, diagnostics and documentation from manufacturers.The larger TPMs are under pressure from both manufacturers and the regional "mom-and-pops." As a group, the TPMs have seen their margins reduced. INPUT believes that consolidations will continue in an effort to reduce overhead and find niches. However, the search for profitability has built-in conflicts between size and specialization, investment and bulk, as summarized in Exhibit V-5.

EXHIBIT V-5

TPM Issues

Expand products/services covered
versus
Move to market niche

Increase use of automation
versus
Attain critical mass

Equal/better level
of service than manufacturer
versus
Costs

Manufacturer support
versus
Manufacturer competition

D

Customer Service as a Business

Increasingly, customer service organizations are viewing themselves as businesses. More importantly, customer service operations are being viewed by *others* as businesses, i.e.:

- By a hardware company's executive management as a profit center
- By the customer service function's own management, as a leveraged buyout opportunity
- By acquirers generally (in the case of some hardware companies, the customer service organization may be among the most valuable parts of the business)
- By investors (Naturally, looking at any function as a business means looking at standard P & L measures. However, what is most important for customer service organizations is to understand the key elements that drive their business' value.)

The following is a checklist of the more important elements that determine the value of a customer service business:

- *Customer satisfaction* is the foundation for any successful business. In the case of a manufacturer's service organization, declining satisfaction with customer service can undermine the entire business.
- *Marketing* is a fairly new concept for some manufacturers' service organizations. In the past, service was almost a follow-on to equipment sales. Marketing—in terms of marketing planning, product development and strategy—was virtually nonexistent. Nowadays, marketing is taking hold in most customer service organizations. This new point of view is responsible for some of the innovative maintenance plans being offered, as well as the initiatives to exploit totally new business areas (such as systems operations).
- *Management systems* are important for tracking internal operations that cannot be solely measured by financial indicators. These include setting objectives and tracking performance against objectives, measures and reasons for employee retention, an interviewing program to track morale, etc.
- *Contract conditions* are a critical element of customer service. How do a company's terms and conditions measure against the competition? Do terms of contracts present revenue opportunities or exposure? Are subcontracts performing as intended?
- *Pricing* is, of course, always a key factor. However, pricing is much more complex than in the past. The implications of pricing, especially special bids and discounts, must be thoroughly understood in order to

gauge the long-term impacts. Competitors' pricing must, similarly, be analyzed for the implication it will have on business.

- *Parts logistics* is one of the few variables completely under the control of the customer service organization. Availability is probably the most often monitored aspect of parts logistics. However, security is a less visible, but important, factor. Security impacts both availability and the book value of inventory.

For a hardware manufacturer's service arm, this advice must be tempered by the need to optimize revenues, profits and customer satisfaction across the entire business. (See Exhibit V-1).

Exhibit V-6 summarizes these business-related issues that affect customer service profitability.

EXHIBIT V-6

Business Evaluation of the Customer Service Function (Checklist)

- Customer satisfaction
- Marketing strategy
- Management systems
- Contract conditions
- Pricing
- Parts logistics
- Optimization

A

Appendix: Reconciliation

A

Appendix: Reconciliation

There were no major changes in definitions in 1989 as compared to 1988. (Unlike the 1987/88 transition, where software support and word processing equipment support was dropped from INPUT's definition of customer service; as in 1988, figures for the software support market are included in Appendix B, as a service to Customer Service Program subscribers.)

Change in the 1989 report was more a change in presentation than in methodology.

- Peripherals maintenance was attached to the appropriate (large, midrange, and PC/workstation) product type, rather than being treated as a standalone category.

- Ancillary services are presented as a separate category.

- The previous categories of "small systems" and "microcomputers/ workstations" are now referred to as "midrange" and "PCs/workstations." The underlying definitions remain the same.

The main difference in the forecasts is that the 1989 report's baseline figures for 1988 are approximately 4% lower than the equivalent figures in the 1988 report. The 1989 report's figures become 4% higher than the equivalent 1988 report figures by 1992.

- 1988 (and 1989) figures: This year's report was based on a more complete analysis of U.S. versus non-U.S. revenue splits and, for several vendors, was able to isolate non-customer service revenues that had been classified as customer services in prior years.

- 1992 and 1993 figures: This year's report forecasts slightly higher growth rates than last year's report for the reasons discussed in the text.

B

Appendix: Software Support

B

Appendix: Software Support

INPUT's forecasts of the customer service market quantified user expenditures for software maintenance and support until 1987.

INPUT's customer service forecast published software support user expenditures likely to be accrued by system manufacturers. As a result, operating system software (also referred to as system control software) user expenditures were included in the customer service forecasts.

In analyzing the activities commonly accepted as software support, it was concluded in the 1988 report that when software support is separately billed for, the majority of software support revenue is derived from product revisions and upgrades, and only a small percentage is derived from actual "fixes." As a result, INPUT does not feel it appropriate to measure software support user expenditures in the customer service forecast; rather, these expenditures are examined more fittingly in INPUT's Market Analysis Program (MAP), which tracks the software products market.

Furthermore, it is INPUT's belief that software support must be delivered by the software developer/distributor. Software doesn't wear out or break (as a hardware product may). As a result, any problem that develops must be either a design fault or the result of the customer not knowing how to use the software properly. Thus, design corrections that result from fixes are best performed by the developer/distributor of the software. With the possible exception of CDC, INPUT is aware of no other third-party provider of actual software maintenance. Thus, software support should be considered a "captive" market.

INPUT will continue to track both the sale and support of the U.S. software market, including those support-related activities identified by software vendors, in its MAP program. As a courtesy to clients of INPUT's Customer Service Program, Exhibit B-1 presents INPUT's MAP forecast of the U.S software product market, including support-related activities.

EXHIBIT B-1

Software Product and Support Forecast, 1988-1994

Software	User Expenditures ($ Billions)							1989-1994 CAGR (Percent)
	1988	1989	1990	1991	1992	1993	1994	
Application Total	13.3	16.0	18.2	21.2	23.9	27.5	31.8	15
• Sales	11.0	13.3	15.1	17.4	19.6	22.3	25.8	14
• Support	2.3	2.7	3.1	3.8	4.3	5.2	6.0	17
(Percent)	17	17	17	18	18	19	19	
Systems Total	12.1	14.8	17.5	20.6	24.4	29.0	34.5	18
• Sales	9.7	11.8	14.0	16.5	19.5	22.9	27.2	18
• Support	2.4	3.0	3.5	4.1	4.9	6.1	7.3	20
Total Software	25.4	30.8	35.7	41.4	48.3	56.4	66.3	17
• Sales	20.7	25.1	29.1	33.9	39.1	45.2	53.0	16
• Support	4.7	5.7	6.6	7.5	9.2	11.2	13.3	19

Report Quality Evaluation

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2. Please indicate your reason for reading this report:
   - ☐ Required reading
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	Extent		**Usefulness (1=Low, 5=High)**				
	Read	Skimmed	1	2	3	4	5
Executive Overview	☐	☐	☐	☐	☐	☐	☐
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Part of Report (______ %)	☐	☐	☐	☐	☐	☐	☐

4. How Useful was:

	1	2	3	4	5
Data presented	☐	☐	☐	☐	☐
Analyses	☐	☐	☐	☐	☐
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	1	2	3	4	5
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Confirm existing ideas	☐	☐	☐	☐	☐
Meet Expectations	☐	☐	☐	☐	☐
Other ______________________________	☐	☐	☐	☐	☐

6. Which topics in the report were the most useful? Why?________________________________

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